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Canadian Science Advisory Secretariat
Science Response 2016/008

Quebec Region

UPDATE OF INDICATORS OF THE STATUS OF THE GULF OF ST. LAWRENCE (4RST) ATLANTIC HALIBUT STOCK IN 2015

Context

The stock assessment of Atlantic Halibut (*Hippoglossus hippoglossus*) in the Gulf of St. Lawrence (4RST) is conducted every two years, with the most recent assessment completed in February 2015. In interim years, an update of the main indicators of this resource is done to determine if major changes in stock status have occurred that would justify a more in-depth study prior to the assessment scheduled for winter 2017. This update was prepared to give Fisheries Management an overview of the most recent stock status.

This Science Response Report results from the Science Response Process from January 20, 2016, on the Stock Status Update of Atlantic Halibut in 4RST.

Analysis

Landings

The fishing season was still ongoing at the time of this update. As of December 22, 2015, landings (fixed and mobile gear) totalled 893 tonnes, or 92% of the quota. The fishing season will last until May 14, 2016.

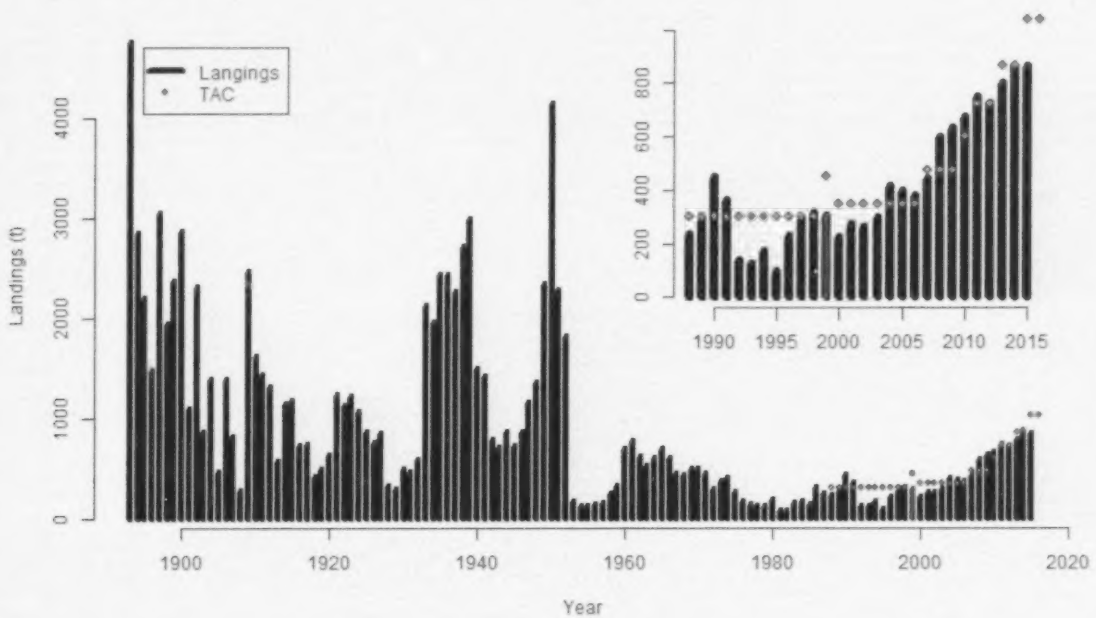

Figure 1. Atlantic Halibut annual landings (t) and total allowable catch (TAC) for NAFO Divisions 4RST. The 2014 and 2015 data are preliminary.

Canada

Abundance indices

For the four trawl surveys (surveys from DFO and from the sentinel fisheries program in the northern Gulf of St. Lawrence (nGSL) and in the southern Gulf of St. Lawrence (sGSL)), the average number of individuals per tow never exceeds one, and the confidence intervals are quite large. However, the consistency between the various surveys strongly suggests that the increase in indicators over the past 15 years is not the result of sampling-related processes, but a reflection of an increase in the abundance of the portion of the population that is catchable through these surveys.

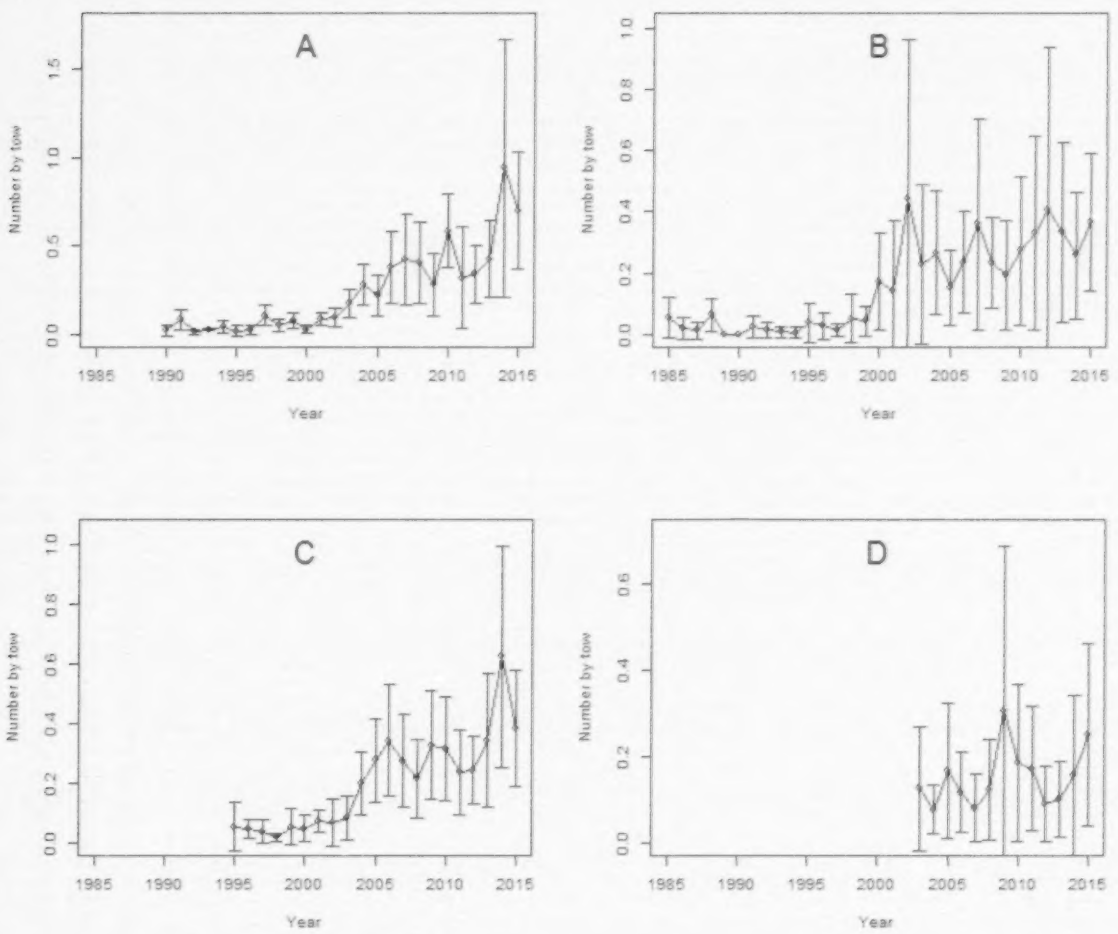

Figure 2. Yields (mean number per tow) obtained in the four fishery-independent surveys: the DFO research vessel survey in nGSL (A), the DFO research vessel survey in sGSL (B), the sentinel fishery program survey in nGSL (C) and the sentinel fishery program survey in sGSL (D). The 95% confidence intervals are shown.

Size structure

Data from the two DFO surveys and from the sentinel program survey in the northern Gulf of St. Lawrence (nGSL) suggest the synchronized passage of cohorts of variable strength and a duration of about 11 years between the production of a cohort and recruitment to the fishery. The cohorts from 1996 to 2002 have apparently contributed to the recent increase in commercial fishery catch rates. The fishery recruitment prospects for 2016 would be lower than for the period prior to 2014 due to the lower abundance of cohorts from 2003 to 2005. However, the stronger cohorts that seem to have been observed since 2006 suggest an increase in fishery recruitment over a 2- to 4-year horizon.

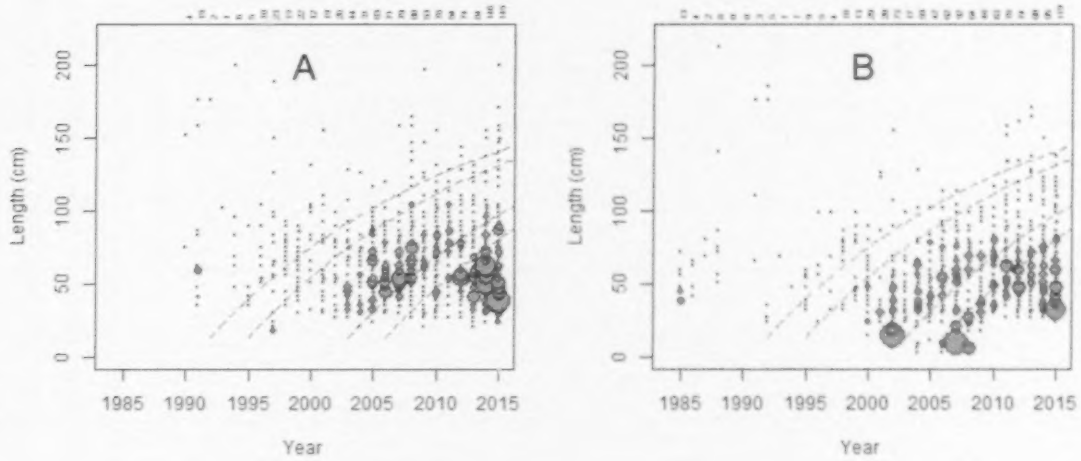

Figure 3. Size frequency distribution for the surveys conducted by DFO in nGSL (a) and sGSL (b). The diameter of each bubble is proportional to the number of individuals caught for the size class. The total number of individuals caught per year is indicated at the top of the graph. The dotted lines show the presumed trajectory of certain cohorts.

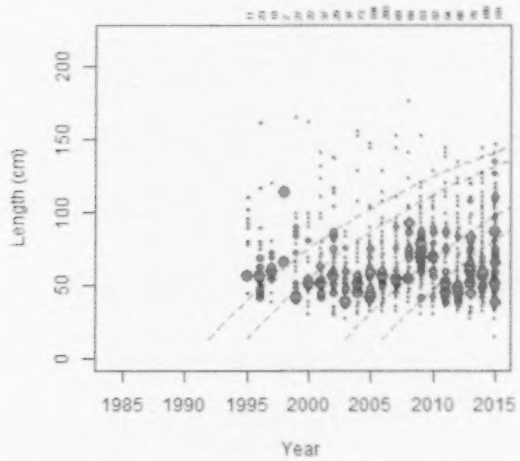

Figure 4. Size frequency distribution for the survey conducted by the mobile gear sentinel fishery program in nGSL. The diameter of the bubbles is proportional to the number of individuals caught for the size class and relative to the year concerned. The total number of individuals sampled per year is indicated at the top of the graph. The dotted lines show the presumed trajectory of certain cohorts.

Conclusion

There were no major changes to the update on the main Atlantic Halibut stock status indicators in the Gulf of St. Lawrence resulting from the fishery-independent surveys compared to the February 2015 assessment. Thus, the fished component of the stock is still high. Harvest levels for the fished component are still unknown. Pre-recruit indicators suggest high recruitment to the fishery over a five-year horizon, although more limited in the short term.

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Sources of Information

This Science Response is the result of the January 20, 2016 Science Response Process on the Stock Status Update of Atlantic Halibut in 4RST.

DFO. 2015. Stock Assessment of Atlantic Halibut in the Gulf of St. Lawrence (NAFO Divisions 4RST) for 2013 and 2014. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2015/023.

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